



CH2MHILL

01-AFC-4
CALIF ENERGY COMMISSION

CH2M HILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA
95833-2937
Tel 916.920.0300
Fax 916.920.8463

May 7, 2001

MAY 08 2001

RECEIVED IN DOCKETS

Ms. Cheri Davis
California Energy Commission
Energy Facilities Siting and Environmental Protection Division
1516 Ninth Street, MS-15
Sacramento, CA 95814

Subject: East Altamont Energy Center Application for Certification
Data Adequacy Response Set 3

Dear Ms. Davis:

Enclosed are 125 copies of the East Altamont Energy Center Application for Certification Data Adequacy Response Set 3. The enclosed response includes the Transmission System Engineering and Water Resources information identified in the two previously submitted East Altamont Energy Center Data Adequacy Responses.

If you have any questions, please call me at 916-920-0300.

Sincerely,

CH2M HILL

Jerry Salamy
Project Manager

c: Alicia Torre/Calpine
Susan Strachan/Calpine
Jim McLucas/Calpine
EJ Koford/CH2M HILL
Nancy Werdel/WAPA

Final

EAST ALTAMONT ENERGY CENTER DATA ADEQUACY RESPONSE SET 3

Prepared for
East Altamont Energy Center, LLC

May 2001

CH2MHILL

2485 Natomas Park Drive
Sacramento, CA 95833

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Section 1.0 Introduction

East Altamont Energy Center, Limited Liability Company (EAEC LLC) submitted an Application for Certification (AFC) to the California Energy Commission (CEC) for the 1,100 megawatt (MW) East Altamont Energy Center (EAEC) combined cycle electrical generating facility on March 29, 2001. On April 26, 2001, the CEC staff issued a letter determining the EAEC AFC data inadequate. EAEC provided additional information in response to the CEC's determination of inadequacy on May 2nd and May 3rd (Data Adequacy Sets 1 and 2, and Supplement A).

In EAEC LLC's Data Adequacy Response, they committed to provide additional data on cultural resources, biological resources, transmission system engineering, and water resources. This document provides these additional data in response to the Commission staff's request for additional data in these topic areas.

Section 2.0 Data Adequacy Responses

As stated above, EAEC, LLC is providing the additional data required for a data adequacy determination by the Commission based on the Data Adequacy Worksheets provided with the Commission's April 26, 2001 letter.

Section 2.1 Biology

Data Adequacy Deficiency – Please provide both the 1) California Native Species Field Survey Forms and 2) California Natural Community Field Survey Forms for the sensitive species found during biological surveys at the proposed project site and proposed linears.

Data Adequacy Response – Only one species of concern was observed during field surveys (western pond turtle), and a CNDDDB form for that species is attached as BIO-2.

**EAST ALTAMONT ENERGY CENTER
DATA ADEQUACY RESPONSES SET 3**

**Attachment BIO-2
California Native Species Field Survey Form**

California Native Species Field Survey Form

Mail to:
Natural Diversity Database
California Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work: 1 - 18 - 1
month (mm) date (dd) year (yyyy)

Scientific Name: *Clemmys marmorata*

Common Name: Western Pond Turtle

Species Found? ☒ yes ☐ no If not, why? _____
Total No. Individuals 1 Subsequent Visit? ☐ yes ☒ no
Is this an existing NDDDB occurrence? ☒ no ☐ unk.
Yes, Occ. # _____
Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: EJKoford
Address: 2485 Natomas Park Drive Suite 600
Sacramento, CA 95833
Email Address: _____
Phone: (916) 920-0212 xt 305

Plant Information

Phenology: _____
% vegetative _____ % flowering _____ % fruiting _____

Animal Information

Age Structure: 1
adults _____ # juveniles _____ # unknown _____
☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☒ other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: Private
Quad Name: Clifton Court Forebay Elevation: 45'
T 2S R 3E NE 1/4 of NE 1/4 of Section 1 T _____ R _____ 1/4 of _____ 1/4 of Section _____
UTM: Zone: _____ (10, 11) Datum: _____ (NAD83, NAD27, WG584, other)
Source: USGS map (GPS, map & type, etc.) Point Accuracy: _____ Meters
UTM Coordinates _____

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)

Byron Bethany Canal 70 Irrigation Canal. Mostly dry, with isolated pools. Observed under edge of culvert, under russian thistle cover.

Other rare species?

Site Information Overall site quality: ☐ Excellent ☐ Good ☒ Fair ☐ Poor

Current / surrounding land use: Agriculture

Visible disturbances / possible threats:

Comments:

Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☒ Other: Identified by observation

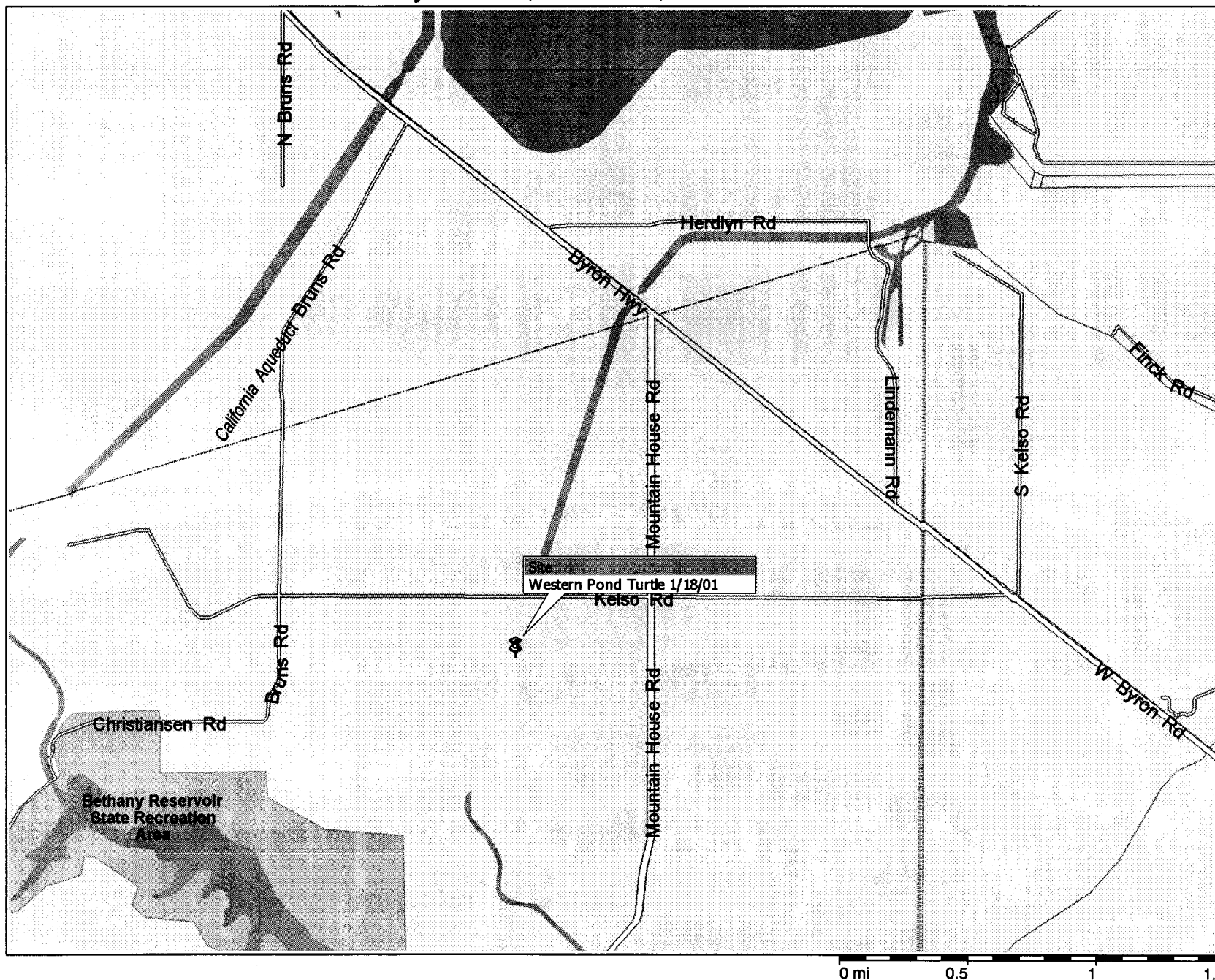
Photographs: (check one or more)

Slide _____ Print _____

Plant / animal ☐ ☐
Habitat ☐ ☐
Diagnostic feature ☐ ☐

May we obtain duplicates at our expense? ☐ yes ☐ no

Byron area, California, United States



Section 2.2 Cultural Resources

Data Adequacy Deficiency – Page 8.3-15 of the Cultural Resources Section indicates that one Native American was notified concerning the project. Please provide a summary of contacts and communications with, and responses from, Native American representatives who may have an interest in heritage lands and/or resources potentially affected by the proposed project. It appears that the project will affect areas in Alameda, Contra Costa and San Joaquin Counties.

Data Adequacy Response – Attached as CUL-2 are copies of letters transmitted to Native American representatives requesting information on sensitive cultural resources in the project area. The Native American Heritage Commissions identified these representatives for San Joaquin, Contra Costa, and Alameda Counties.

**EAST ALTAMONT ENERGY CENTER
DATA ADEQUACY RESPONSES SET 3**

Attachment CUL-2

Native American Representatives Contact Letters

**CH2MHILL**

CH2M HILL
2300 NW Walnut Blvd.
Corvallis, OR
97330-3538
P.O. Box 428
Corvallis, OR
97339-0428
Tel 541.752.4271
Fax 541.752.0276

May 3, 2001

161327.LS.05.CR

Ms. Kathryn Ramey, Chairperson
Ione Band of Miwok Indians
P.O. Box 1190
Ione, CA 95640

Dear Ms. Ramey,

Subject: Calpine Corporation – Proposed Power Plant

CH2M HILL is assisting Calpine Corporation with environmental permits for a natural gas-fired electrical generating plant to be constructed near Tracy, California. Please find attached a pair of maps that show the project area and its associated linear facilities.

Mr. Larry Myers of the Native American Heritage Commission suggested that we contact you regarding this project. We would appreciate your letting us know if there are any culturally sensitive areas within the immediate project vicinities so that we can avoid impacts from the project or lessen project impacts to a less than significant level. Thank you in advance for your cooperation and assistance. I can be reached by telephone at (541) 758-0235 (ext. 3662), by fax at (541) 752-0276 or by e-mail at jbard@ch2m.com. A letter response can be sent to my attention at CH2M HILL, Inc., 2300 NW Walnut Blvd, Corvallis, OR 97330.

Sincerely,

CH2M HILL

James C. Bard
Cultural Resource Specialist

Enclosures – Maps

c: EJ Koford/SAC

**CH2MHILL**

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2300 NW Walnut Blvd.

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97339-0428

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May 3, 2001

161327.LS.05.CR

Mr. Glenn Villa, Jr.
Ione Band of Miwok Indians
P.O. Box 1190
Ione, CA 95640

Dear Mr. Villa, Jr.

Subject: Calpine Corporation - Proposed Power Plant

CH2M HILL is assisting Calpine Corporation with environmental permits for a natural gas-fired electrical generating plant to be constructed near Tracy, California. Please find attached a pair of maps that show the project area and its associated linear facilities.

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Sincerely,

CH2M HILL

James C. Bard
Cultural Resource Specialist

Enclosures - Maps

c: EJ Koford/SAC

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May 3, 2001

161327.LS.05.CR

Ms. Ramona Garibay, Representative
Trina Marine Ruano Family
37974 Canyon Heights Drive
Fremont, CA 94536

Dear Ms. Garibay,

Subject: Calpine Corporation - Proposed Power Plant

CH2M HILL is assisting Calpine Corporation with environmental permits for a natural gas-fired electrical generating plant to be constructed near Tracy, California. Please find attached a pair of maps that show the project area and its associated linear facilities.

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Sincerely,

CH2M HILL

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Cultural Resource Specialist

Enclosures -Maps

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May 3, 2001

161327.LS.05.CR

Mr. Andres Rosales Galvan
The Ohlone Indian Tribe
P.O. Box 3152
Mission San Jose, CA 94539

Dear Andy,

Subject: Calpine Corporation – Proposed Power Plant

CH2M HILL is assisting Calpine Corporation with environmental permits for a natural gas-fired electrical generating plant to be constructed near Tracy, California. Please find attached a pair of maps that show the project area and its associated linear facilities.

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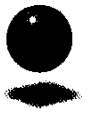
Sincerely,

CH2M HILL

James C. Bard
Cultural Resource Specialist

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May 3, 2001

161327.LS.05.CR

Mr. Thomas P. Soto
P.O. Box 269
Foresthill, CA 95631

Dear Mr. Soto,

Subject: Calpine Corporation – Proposed Power Plant

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Sincerely,

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May 3, 2001

161327.LS.05.CR

Ms. Michelle Zimmer
4952 McCoy Avenue
San Jose, CA 95130

Dear Ms. Zimmer,


Subject: Calpine Corporation - Proposed Power Plant

CH2M HILL is assisting Calpine Corporation with environmental permits for a natural gas-fired electrical generating plant to be constructed near Tracy, California. Please find attached a pair of maps that show the project area and its associated linear facilities.

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Sincerely,

CH2M HILL



James C. Bard
Cultural Resource Specialist

Enclosures -Maps

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May 3, 2001

161327.LS.05.CR

Ms. Linda G. Yamane
1195 B Rousch Avenue
Seaside, CA 93955

Dear Ms. Yamane,

Subject: Calpine Corporation – Proposed Power Plant

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Enclosures –Maps

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May 3, 2001

161327.LS.05.CR

Ms. Jakki Kehl
5461 Beaver Lane
Byron, CA 94514

Dear Ms. Kehl,

Subject: Calpine Corporation – Proposed Power Plant

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Sincerely,

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Enclosures –Maps

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May 3, 2001

161327.LS.05.CR

Ms. Irene Zwierlein
789 Canada Road
Woodside, CA 94062

Dear Ms. Zwierlein,

Subject: Calpine Corporation – Proposed Power Plant

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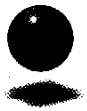
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James C. Bard
Cultural Resource Specialist

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May 3, 2001

161327.LS.05.CR

Ms. Ella Williams Rodriquez
P.O. Box 1411
Salinas, CA 93902

Dear Ella,

Subject: Calpine Corporation – Proposed Power Plant

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Sincerely,

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James C. Bard
Cultural Resource Specialist

Enclosures –Maps

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Fax 541.752.0276

May 3, 2001

161327.LS.05.CR

Ms. Marjorie Ann Reid
4869 Englewood Drive
San Jose, CA 95129

Dear Ms. Reid,

Subject: Calpine Corporation – Proposed Power Plant

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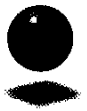
Sincerely,

CH2M HILL

James C. Bard
Cultural Resource Specialist

Enclosures – Maps

c: EJ Koford/SAC

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May 3, 2001

161327.LS.05.CR

Ms. Ann Marie Sayer, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Holister, CA 95024

Dear Ms. Sayer,

Subject: Calpine Corporation – Proposed Power Plant

CH2M HILL is assisting Calpine Corporation with environmental permits for a natural gas-fired electrical generating plant to be constructed near Tracy, California. Please find attached a pair of maps that show the project area and its associated linear facilities.

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Sincerely,

CH2M HILL

James C. Bard
Cultural Resource Specialist

Enclosures – Maps

c: EJ Koford/SAC

Section 2.3 Transmission System Engineering

Data Adequacy Deficiency – Provide power load flow diagrams which demonstrate conformance or non conformance with utility reliability and planning criteria.

Provide a System Impact Study per the study plan of Appendix 5.4-A.

Data Adequacy Response – The power load flow diagrams prepared by Western Area Power Administration are attached as TSE-2. The attached power flow drawings are drawings of the base cases and the outages for each of the cases, which correspond to Tables 2, 3 and 4 in the System Impact Study submitted on May 2 in EAEC LLC's Data Adequacy Set 1.

**EAST ALTAMONT ENERGY CENTER
DATA ADEQUACY RESPONSES SET 3**

**Attachment TSE-2
Power Load Flow Diagrams**

**EAST ALTAMONT ENERGY CENTER
POWER LOAD FLOW DIAGRAMS
TABLE 2 CASES**

Base Case Without EAEC
The existing Tracy-Westley Line is in service (not shown)

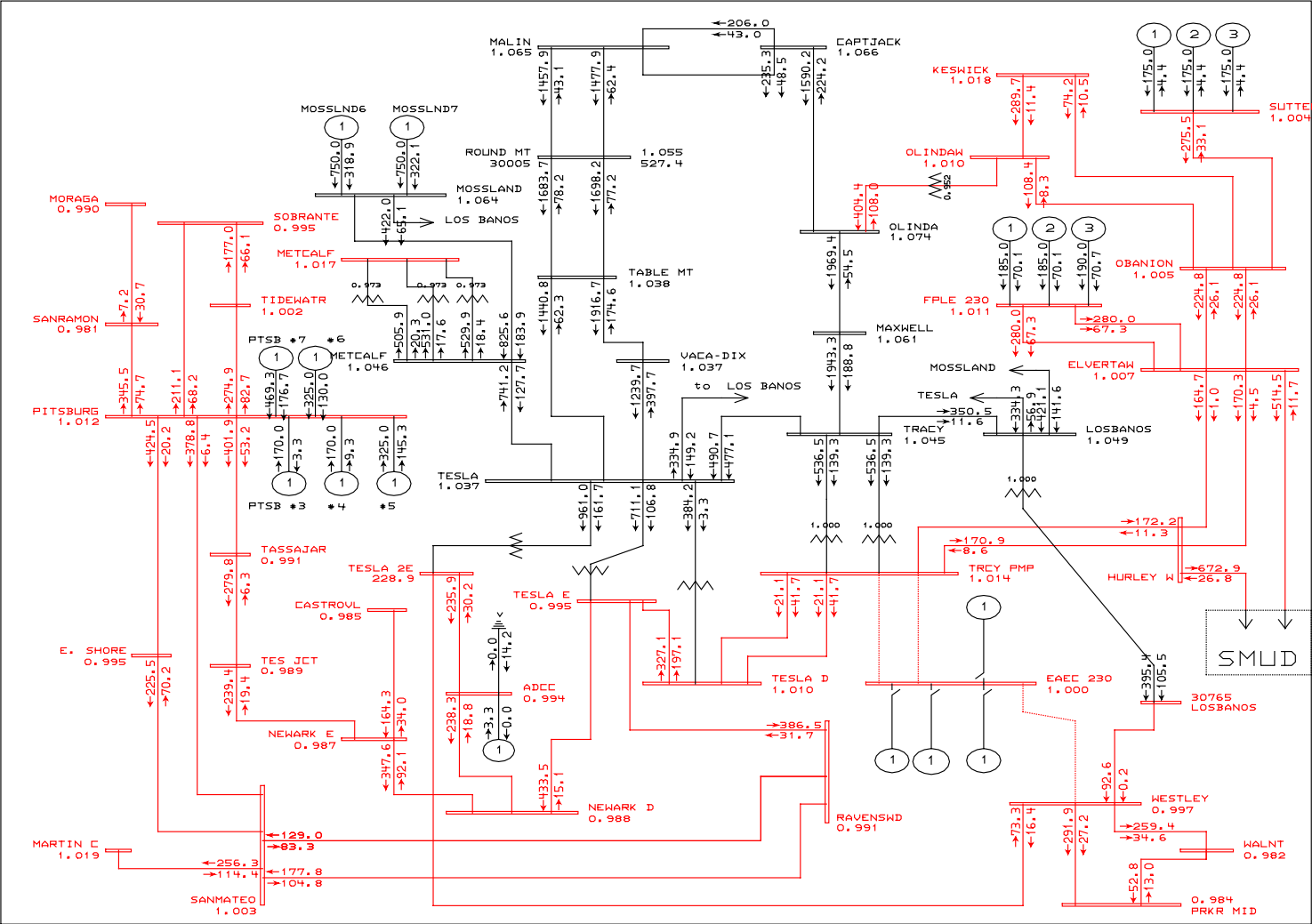


Table 2 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
Pittsburgh-E.Shore Outage

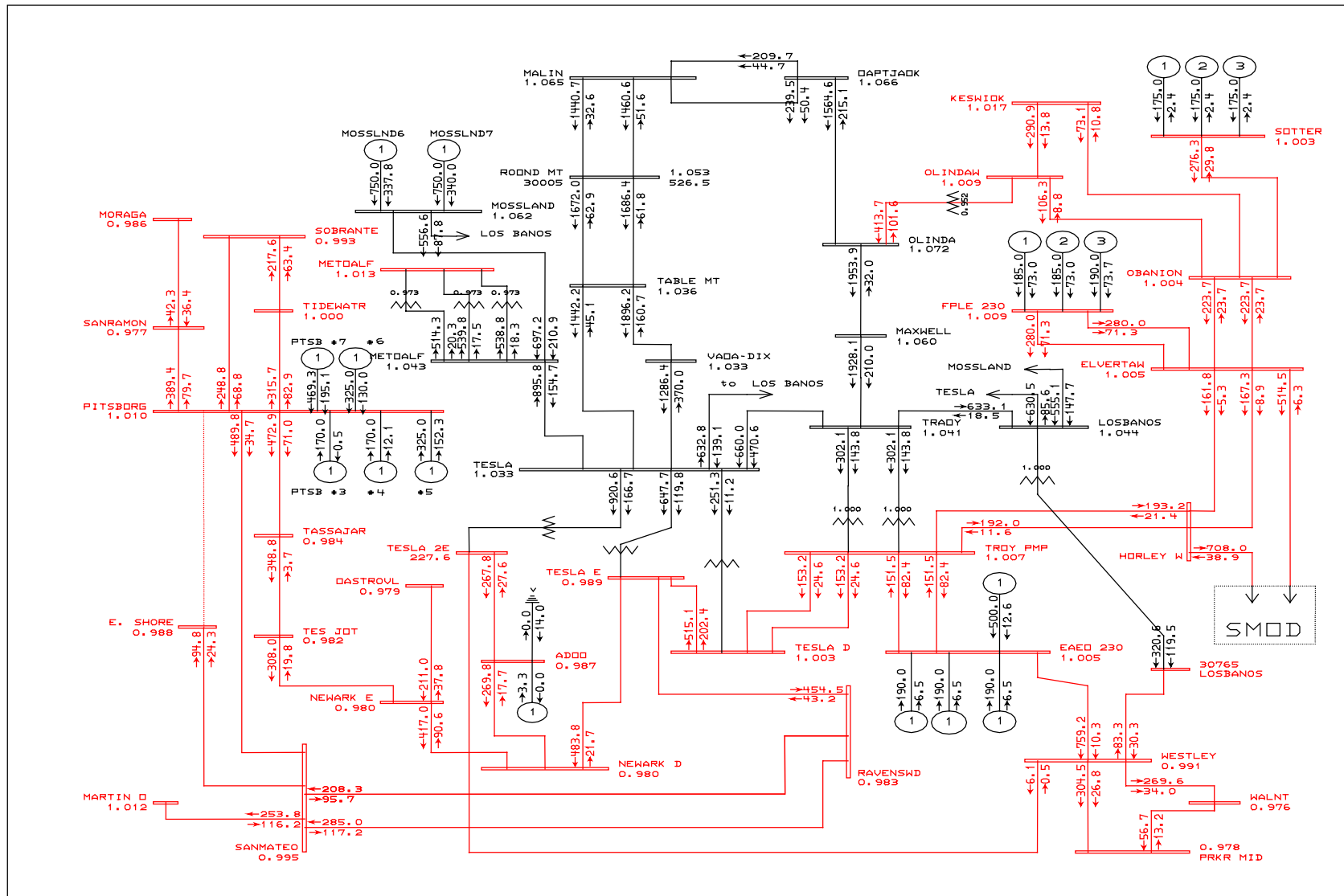
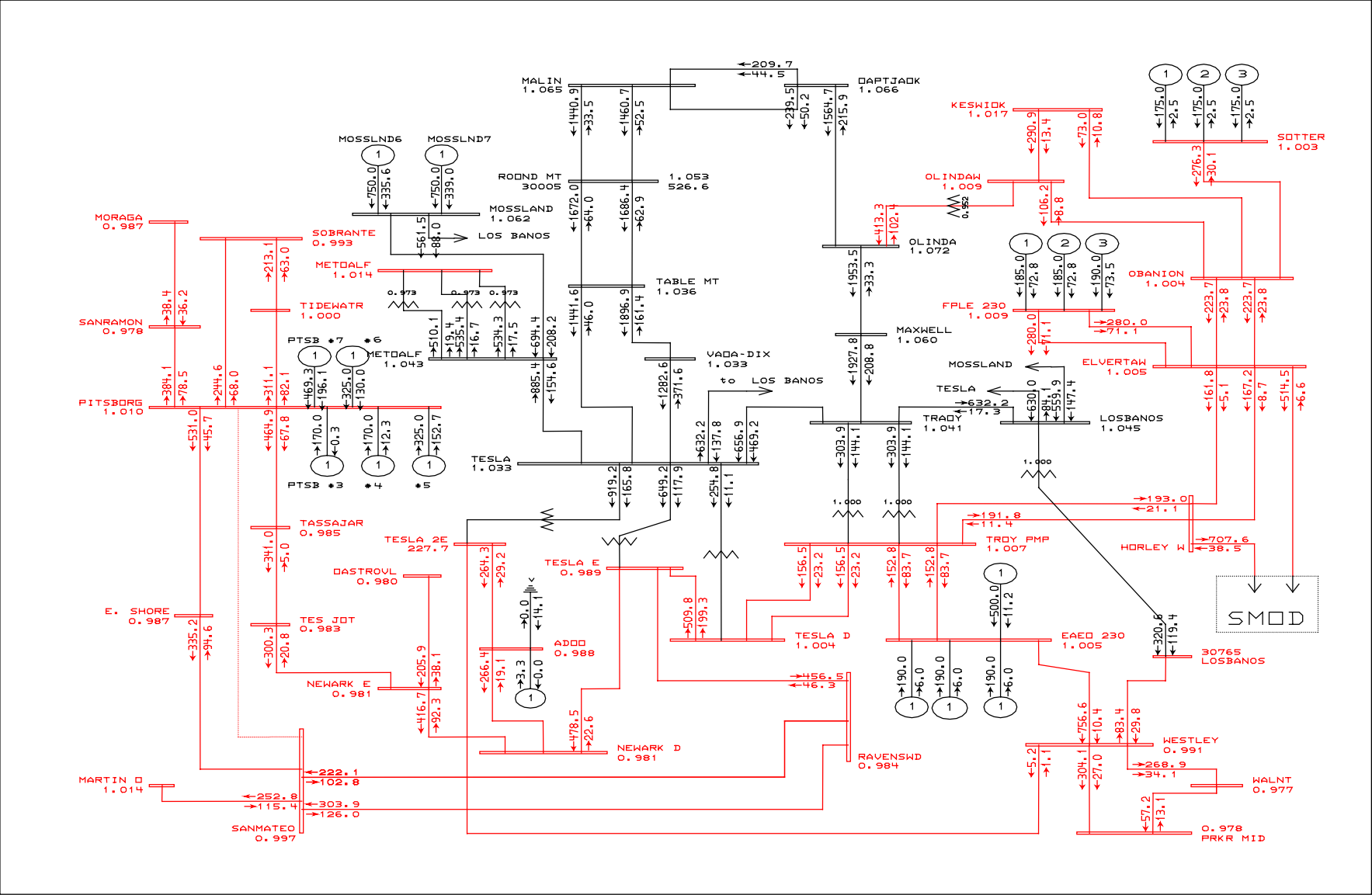


Table 2 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
Pittsburg-San Mateo Outage



**EAST ALTAMONT ENERGY CENTER
POWER LOAD FLOW DIAGRAMS
TABLE 3 CASES**

Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
Tracy-Tesla #1 Outage

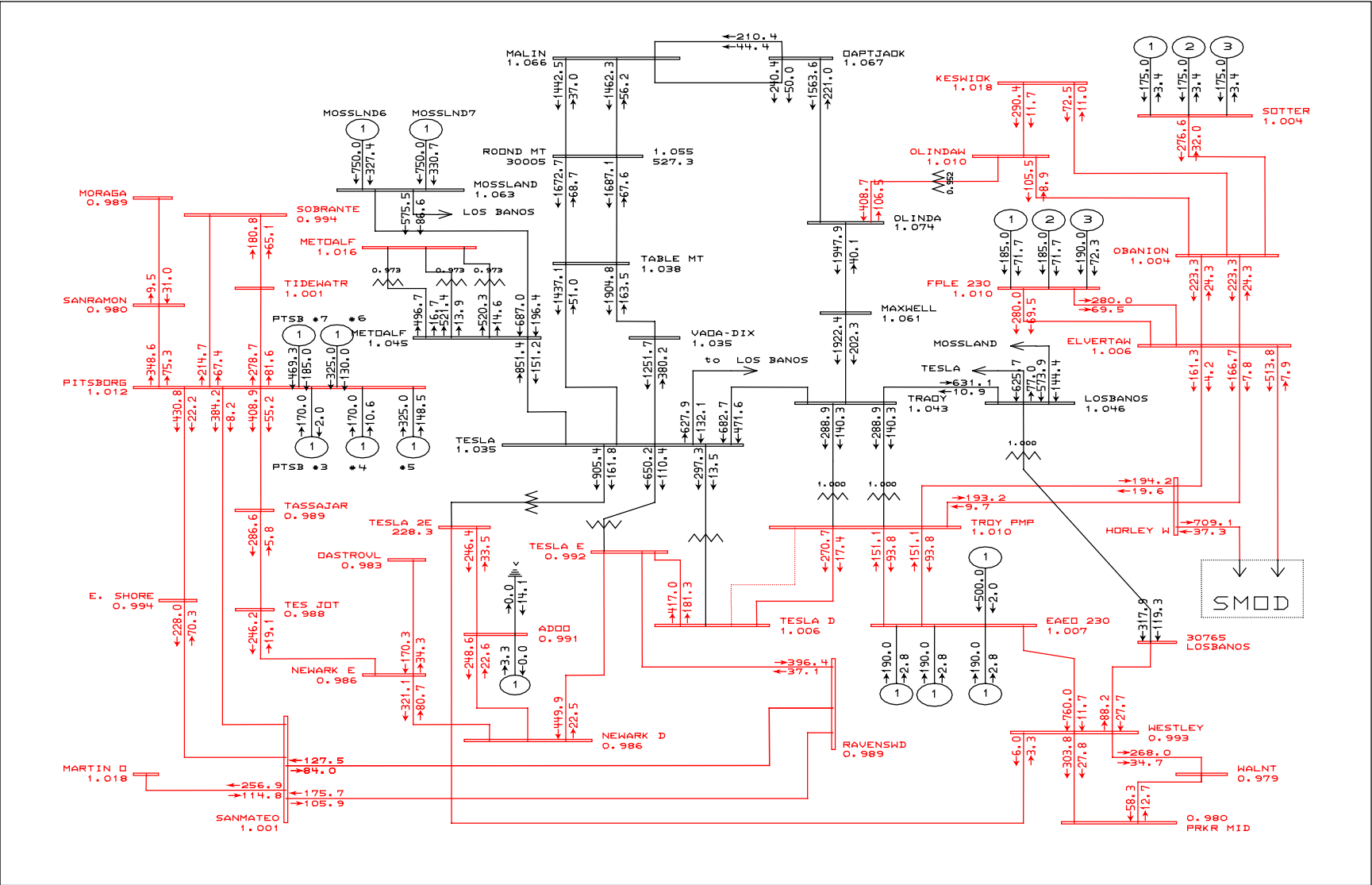


Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
No Outages

Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
EAEC-Tracy #1 Outage

Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley Procter-Hedge Outage

Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
EAEC-Tracy #2 Outage

Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
EAEC-Westley Outage

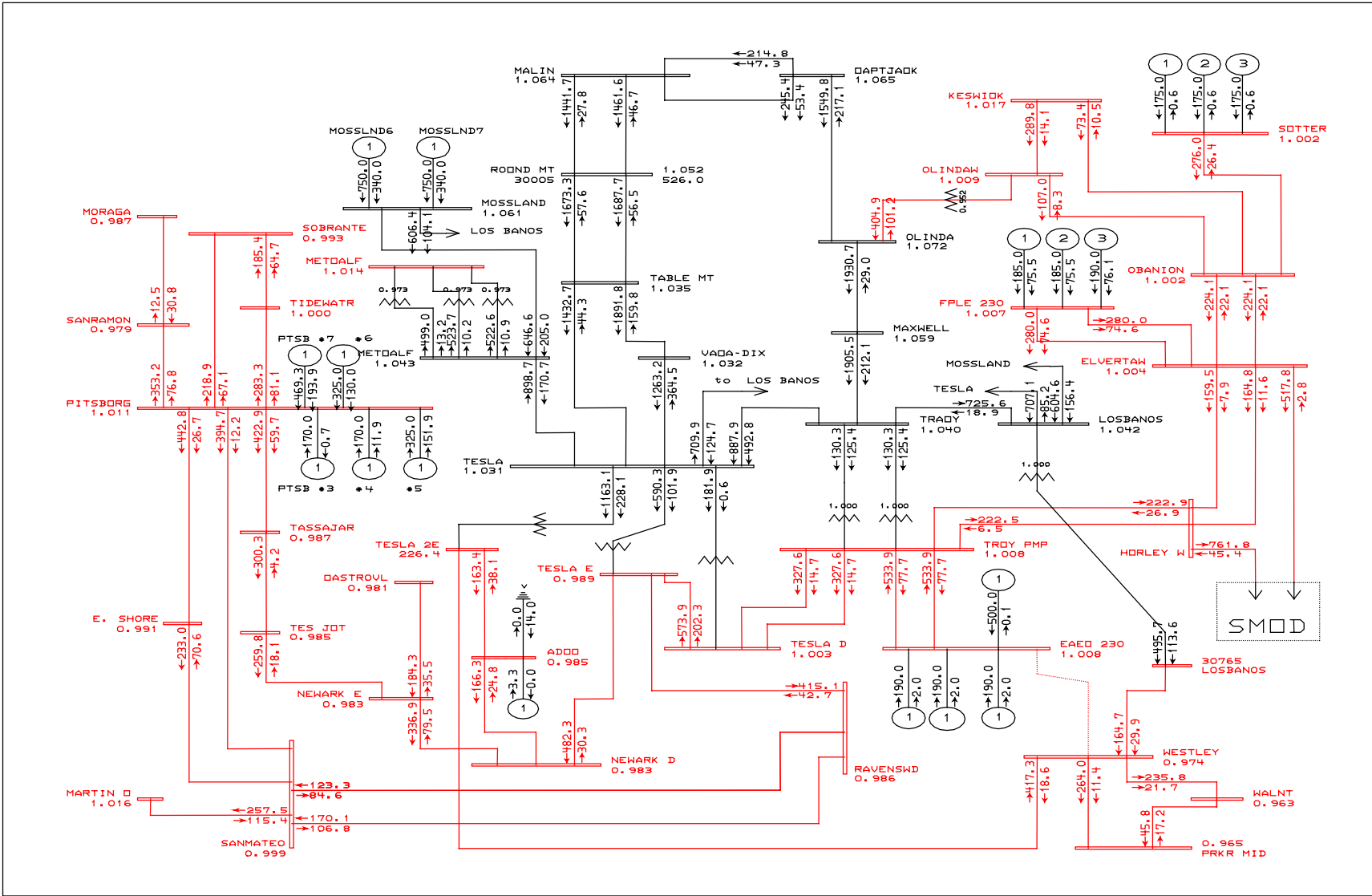


Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
Tracy-Hurley #1 Outage

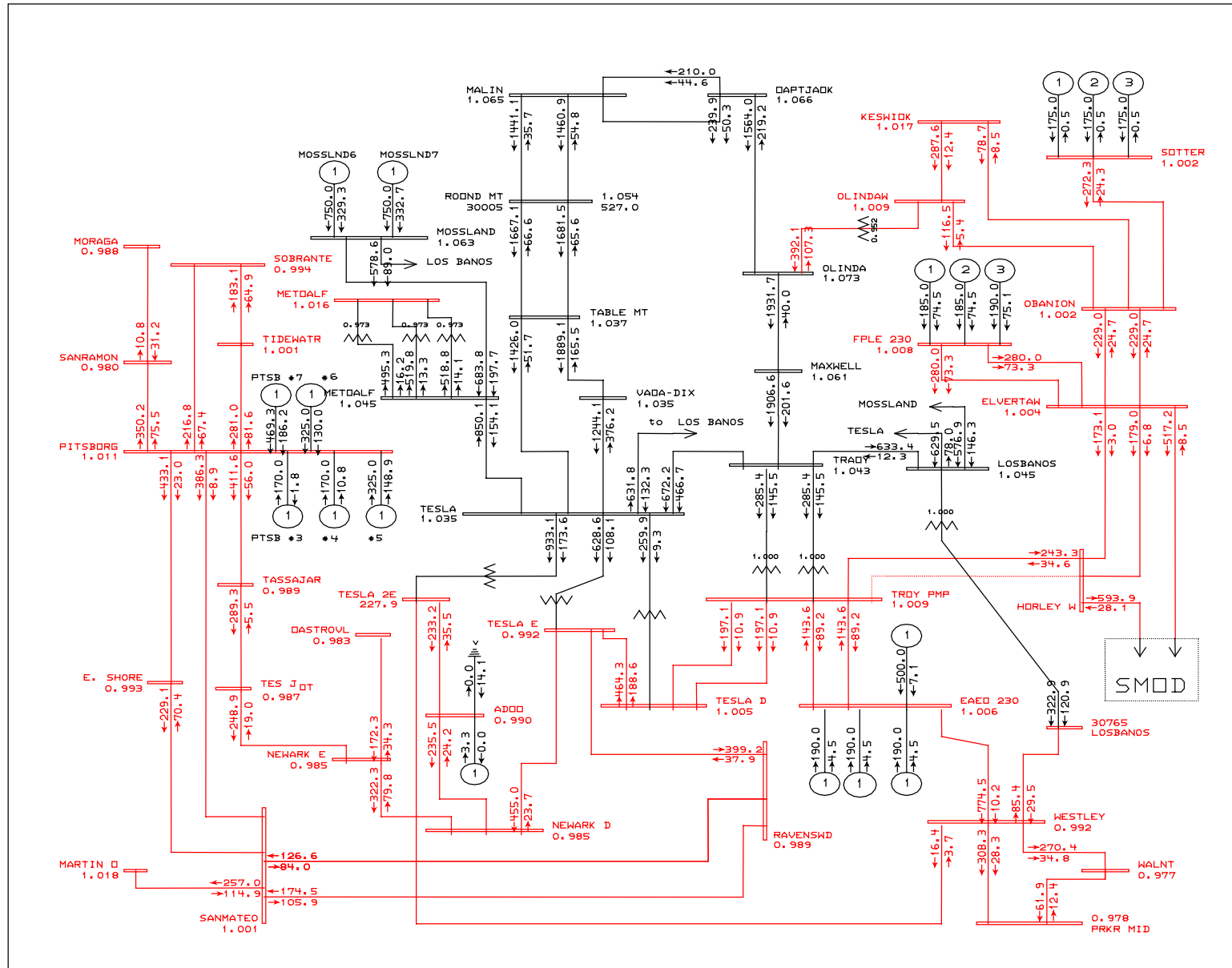


Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley Procter-Hurley Outage

Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
Tracy-Hurley #2 Outage

Table 3 -2005 HS Case with EAEC, **One Line** from EAEC to Westley
Tracy-Tesla #2 Outage

**EAST ALTAMONT ENERGY CENTER
POWER LOAD FLOW DIAGRAMS
TABLE 4 CASES**

Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley
Westley-PRKR MID Outage

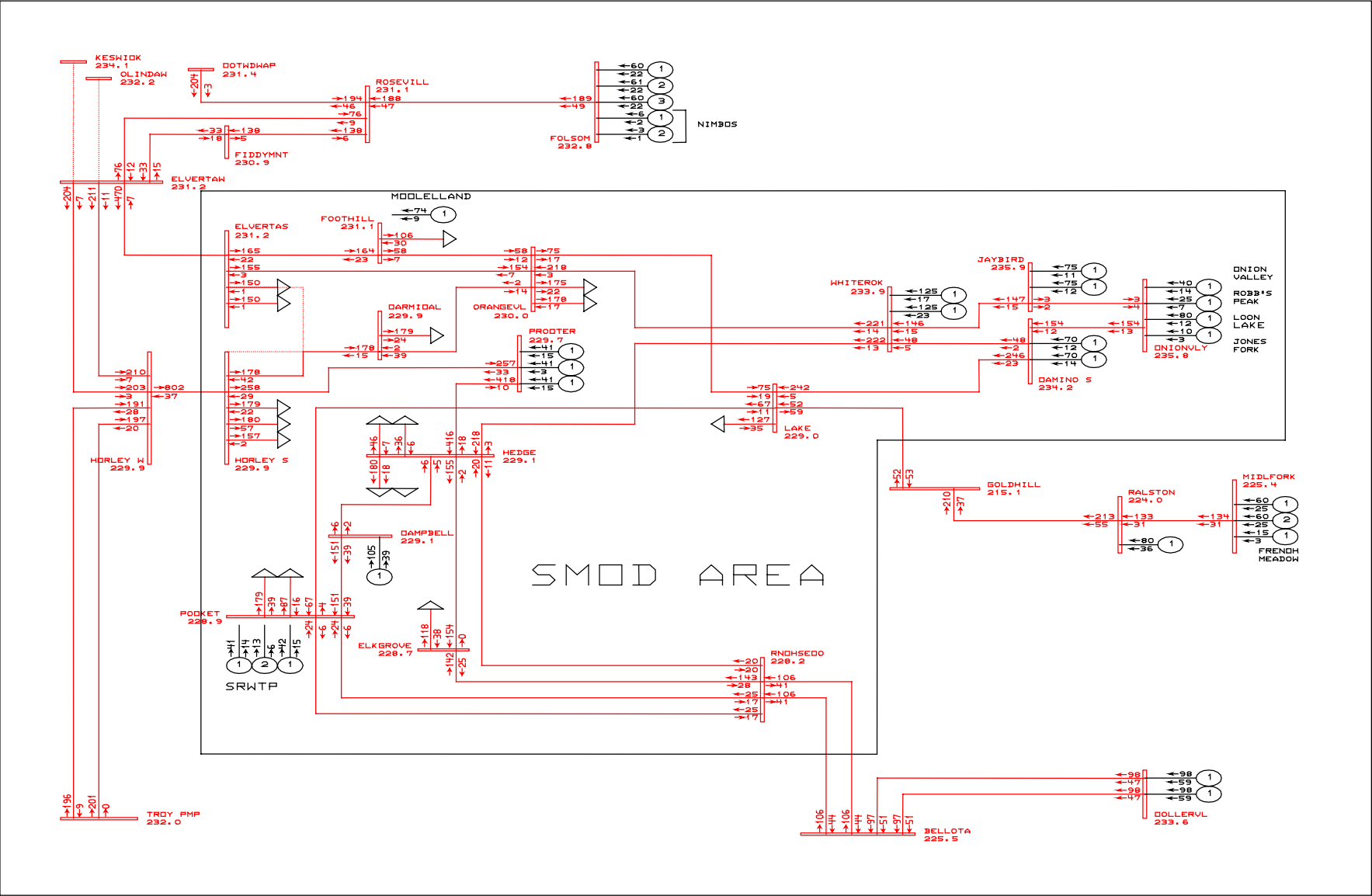


Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley Carmichael-Hurley Outage

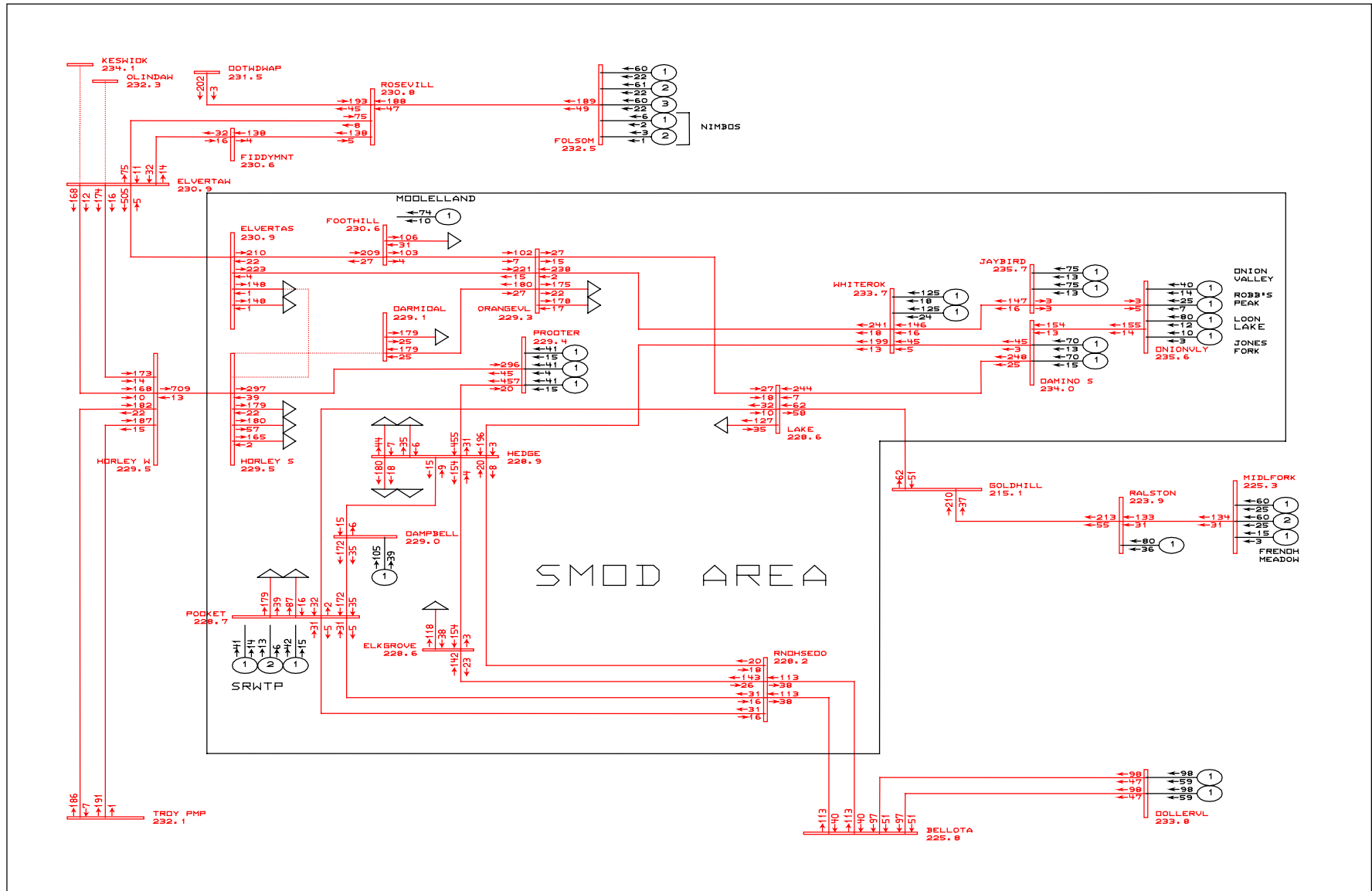


Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley
EAEC-Westley #1 Outage

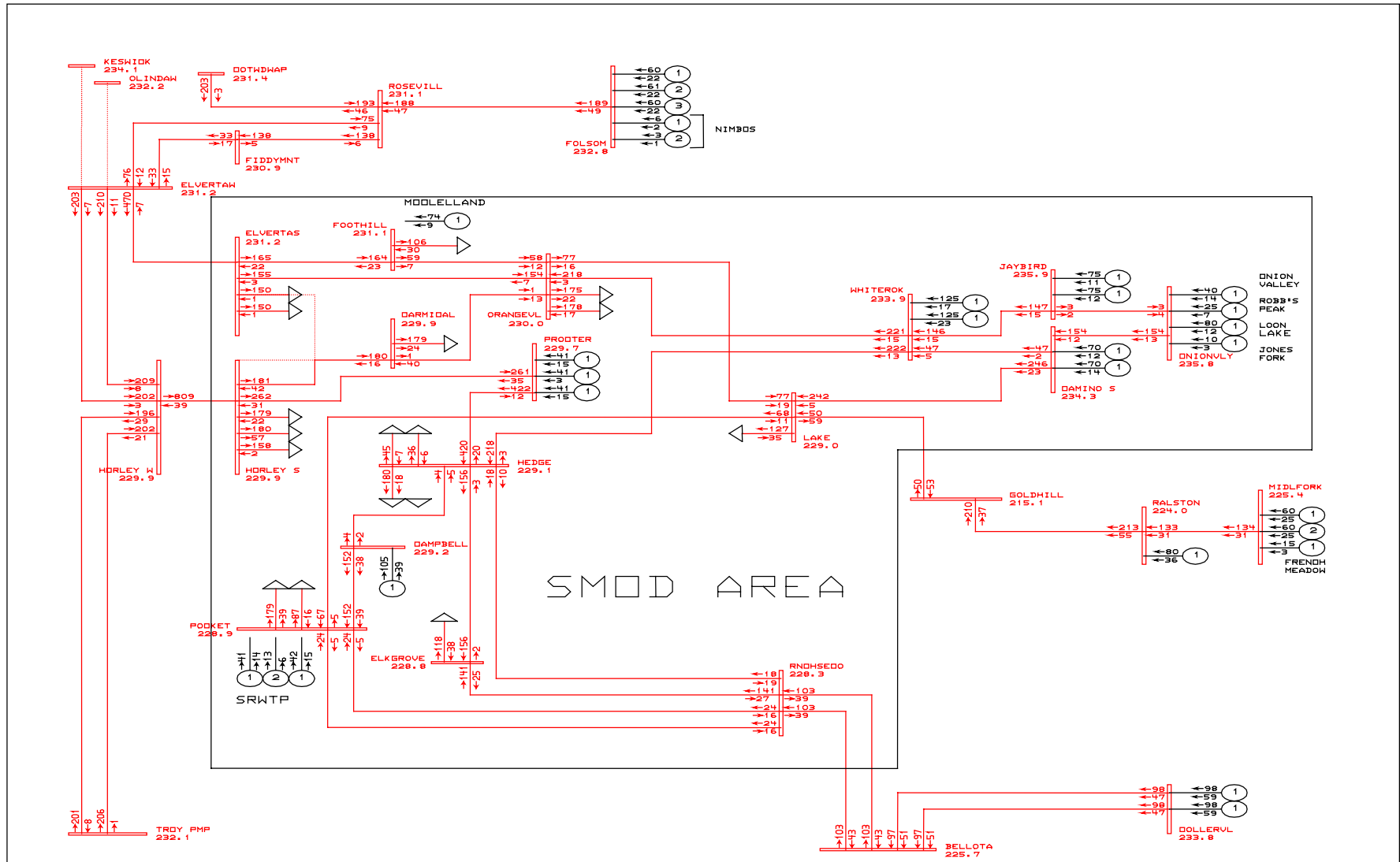


Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley
Elk Grove-Rancho Seco Outage

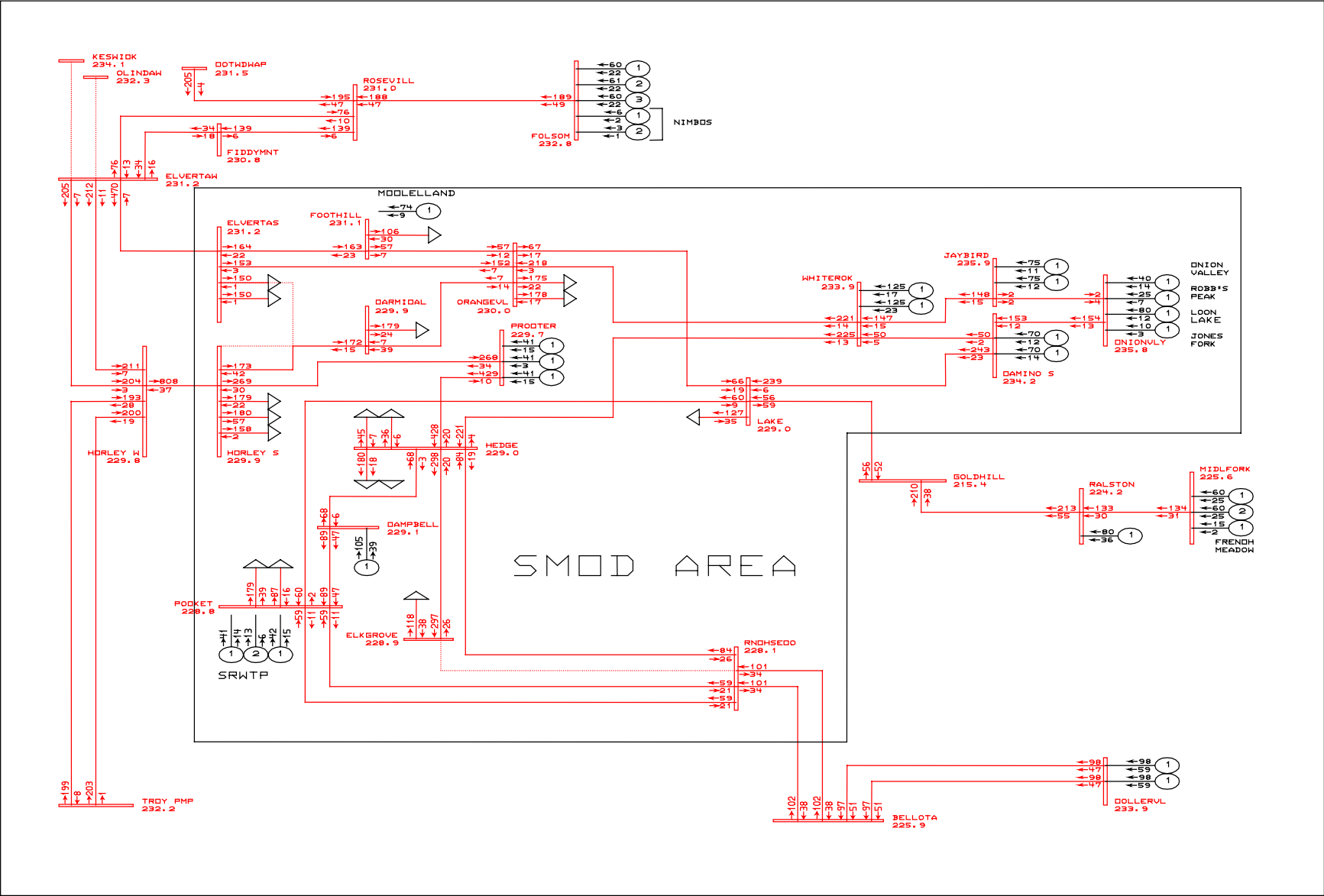


Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley Elverta-Foothill Outage

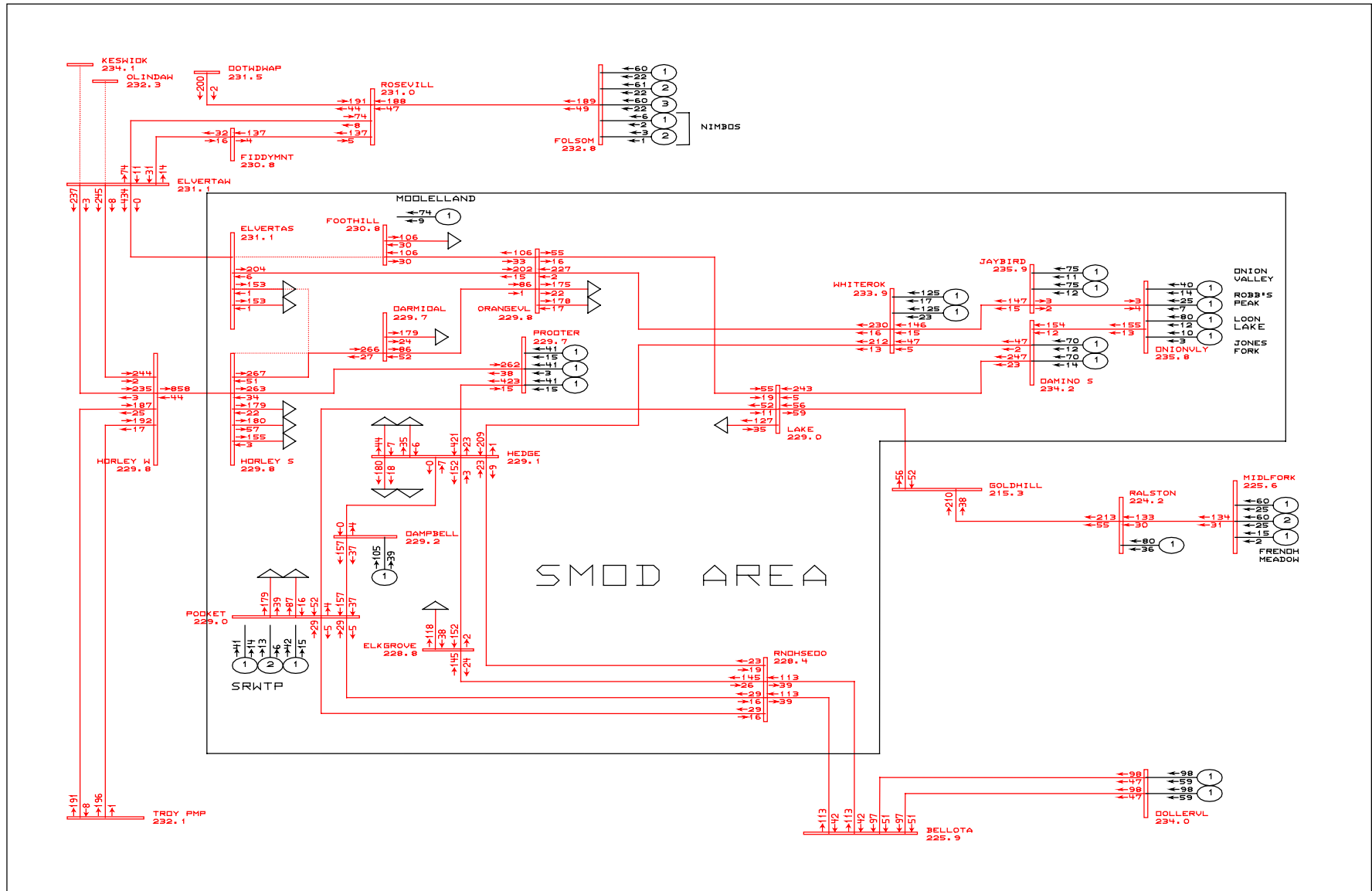


Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley Elverta-Orangevale Outage

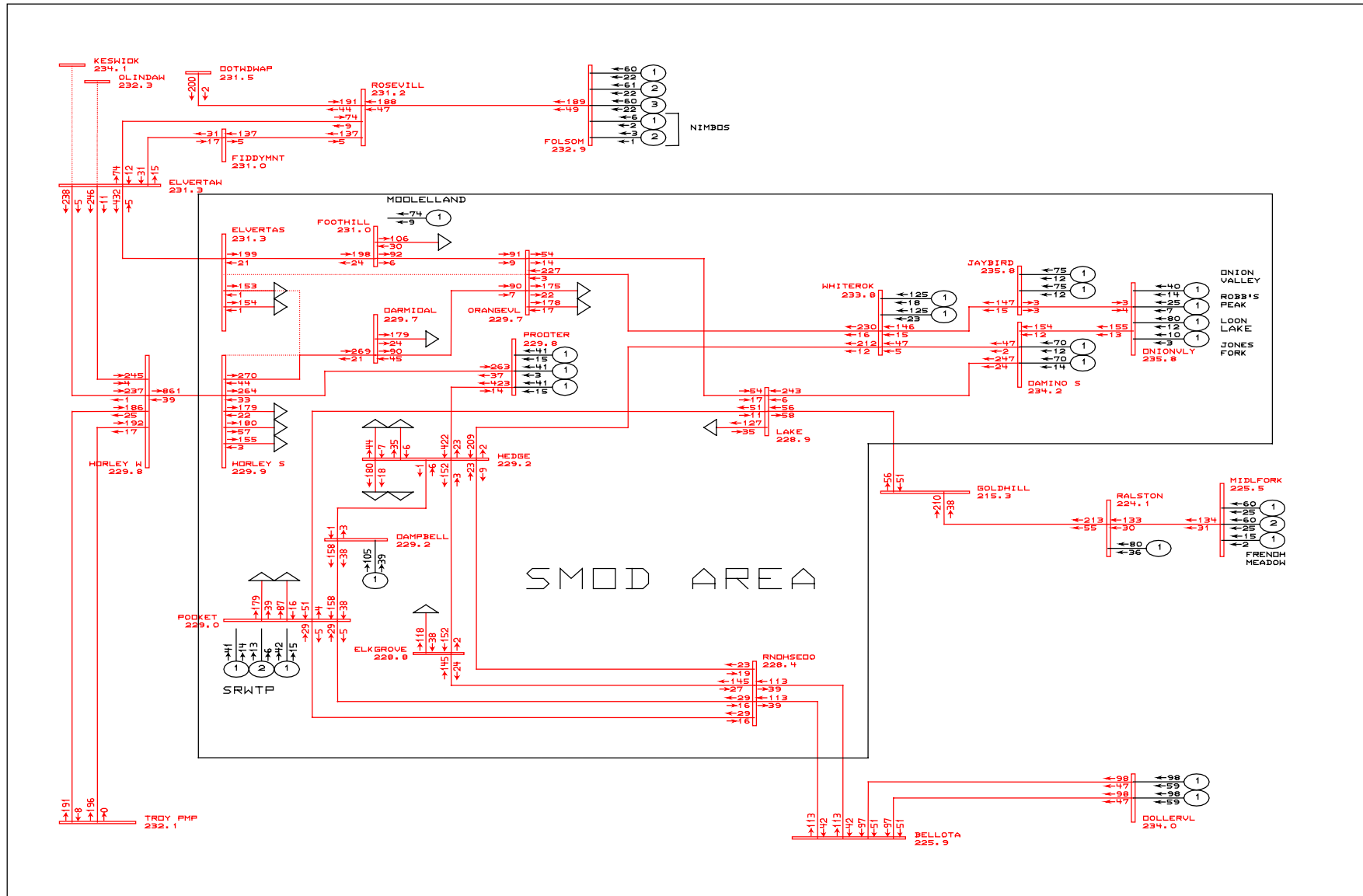


Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley
Lake-Orangevale Outage

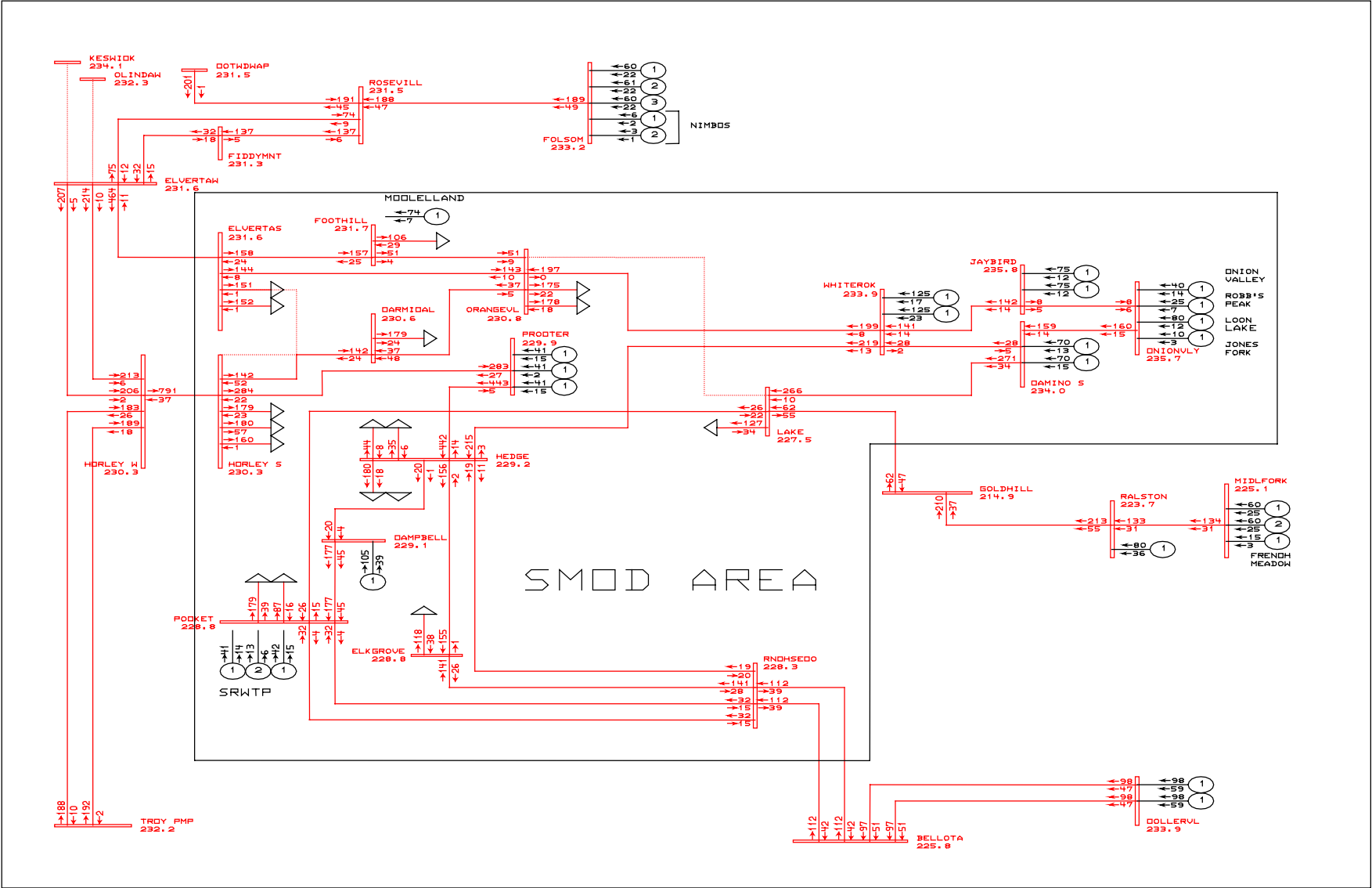


Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley
Pocket-Lake Outage

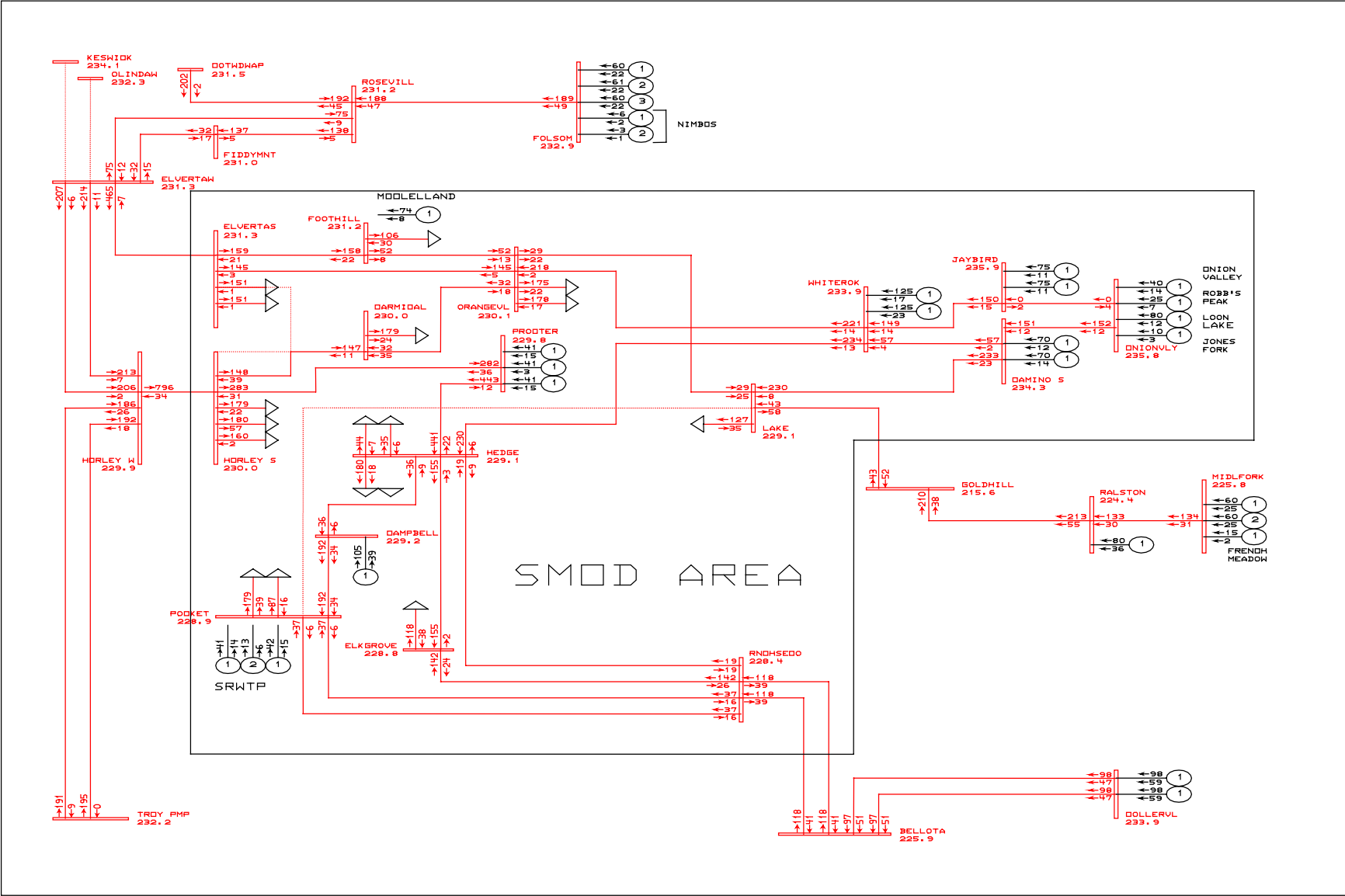
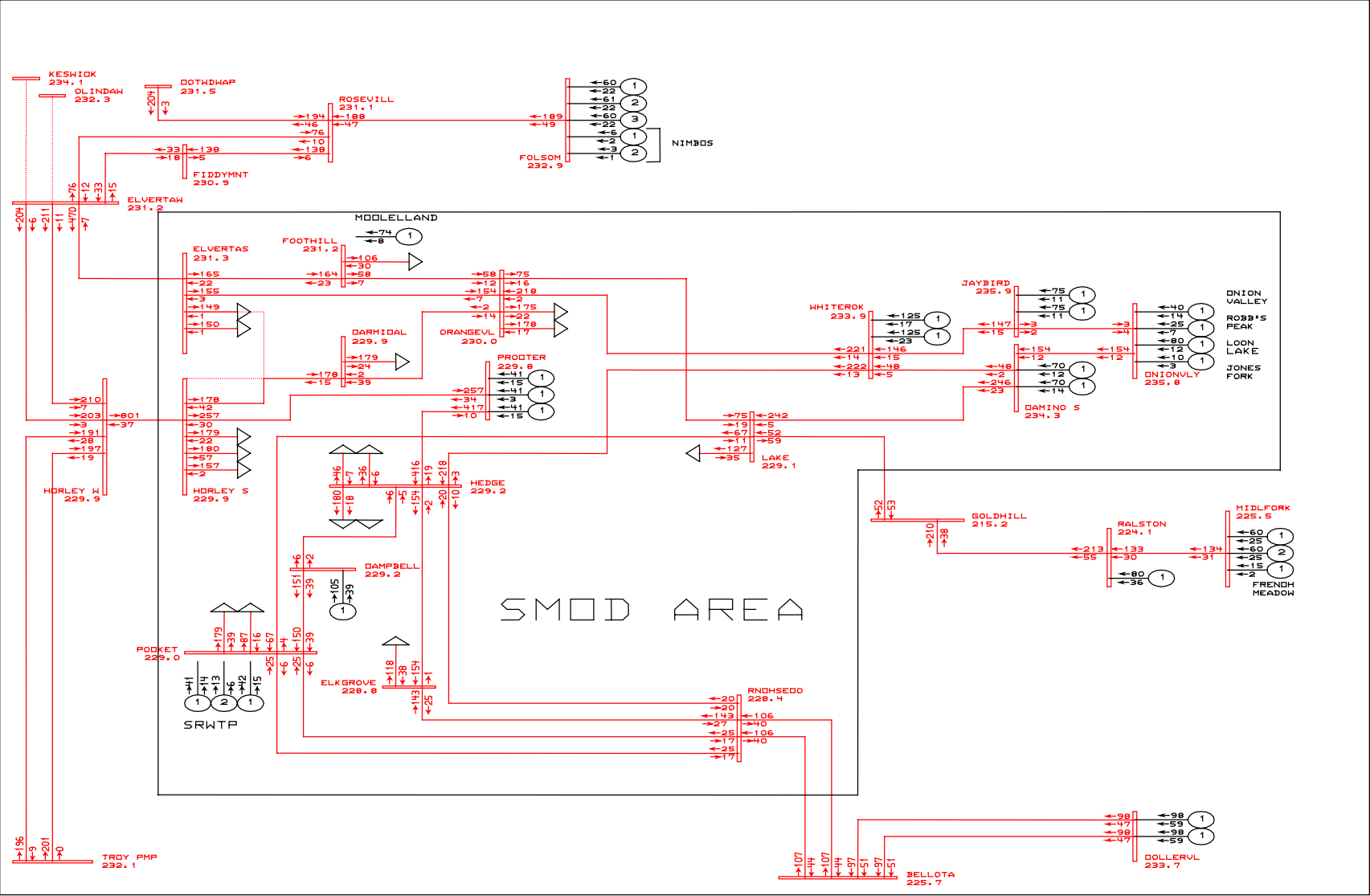


Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley
PRKR MID-Parker 1M #1 Outage

Table 4 -2005 HS Case with EAEC, **Two Lines** from EAEC to Westley
PRKR MID-Parker2M #1 Outage



**EAST ALTAMONT ENERGY CENTER
DATA ADEQUACY RESPONSES SET 3**

Section 2.4 Water Resources

Data Adequacy Deficiency –W-(13). Metals and trace elements are a concern in the source water when concentrated in cooling towers. Table 8.14-1 suggests that BBID uses both ground and surface water sources to supply its customers, however, the text on page 8.14-2 only references surface sources. In addition, Table 8.14-1 provided insufficient information on source water chemical characteristics. Provide additional analytical data on the water sources, particularly groundwater, for metals and trace elements using an analytical method with analytes and detection limits comparable to U.S. EPA Method 200.8, Inductively Coupled Plasma – Mass Spectrometry. Report all analytes and detection limits. Please provide calculations of the revised estimated concentrations of all constituents of concern in all waste or process water streams, and in the total wastewater discharge to the evaporation ponds (based on a revised Table 8.14-1).

Please provide physical and chemical characteristics for water to be provided for potable/domestic needs.

Data Adequacy Response –W-13.

In response to this data adequacy comment, EAEC LLC has revised Tables 7.3 and 8.14-1 of the AFC to incorporate source water quality data using more sensitive analytical detection methods. Tables 7-3 Revised and 8.14-1 Revised present the source water quality for surface water, recycled water, and local groundwater. Tables 8.14-3 Revised and 8.14-4 Revised present the estimated quality of drift and brine discharge, based on the updated source water quality data.

TABLE 7-3 REVISED

Estimated BBID Raw Water Quality, DDSD Recycled Water Quality, and EAEC Cooling Tower Makeup Water Quality in Year 20

		Range of Water Quality Data			
		BBID Raw Water ^{a,b}			
Parameter	Units	Range	Mean	Projected Recycled Water ^c	Estimated EAEC Water Quality in Year 20 ^d
Calcium	Mg/L	11 to 25	15	25	22
Magnesium	Mg/L	2 to 14	8	2	4
Sodium	Mg/L	17 to 65	28	150	110
Potassium	Mg/L	4	4	13	10
Iron, dissolved	Mg/L	.0025 to 0.19	0.03	0.246	0.17
Manganese	Mg/L	<0.0025 to .057	0.02	0.023	0.022
Ammonia as NH ₄	Mg/L	No data available	No data available	27	27 (does not include BBID data)
Sulfate	Mg/L	14 to 59	30	180	131
Chloride	Mg/L	14 to 67	33	285	202
Fluoride	Mg/L	0.005 to 0.286	0.05	0.710	0.49
Nitrate as N	Mg/L	0.09 to 0.76	0.6	18	12
Phosphate	Mg/L	No data available	No data available	4.8	4.8 (does not include BBID data)
Alkalinity as CaCO ₃	Mg/L	29 to 95	57	260	193
Arsenic	Mg/L	0.001 to 0.003	0.0017	<0.005	0.0039

EAST ALTAMONT ENERGY CENTER DATA ADEQUACY RESPONSES SET 3

TABLE 7-3 REVISED

Estimated BBID Raw Water Quality, DDSD Recycled Water Quality, and EAEC Cooling Tower Makeup Water Quality in Year 20

Parameter	Units	Range of Water Quality Data			
		BBID Raw Water ^{a,b}		Projected Recycled Water ^c	Estimated EAEC Water Quality in Year 20 ^d
		Range	Mean		
Barium	µg/L	36.5	36.5	12	20.2
Beryllium	µg/L	<1.0	<1.0	<1	<1.0
Boron	mg/L	0.002 to 0.4	0.14	1	0.713
Cadmium	µg/L	<1.0	<1.0	<2	1.67
Chromium	mg/L	0.002 to 0.05	0.004	0.010	0.008
Copper	mg/L	0.002 to 0.01	0.004	0.0058	0.005
Lead	mg/L	0.0005 to 0.0025	0.0024	0.0065	0.005
Mercury	µg/L	<0.2	<0.2	0.0111	0.074
Nickel	µg/L	2.43	2.43	5.1	4.21
Silver	µg/L	<0.5	<0.5	<2	1.50
Selenium	µg/L	0.0005 to 0.0025	0.0006	<1	0.67
Thallium	µg/L	<1.0	<1.0	<10	7.0
Zinc	mg/L	0.0025 to 0.009	0.007	0.01	0.009
TOC	mg/L	3 to 7	4.06	No data available	4.06(BBID data only)
Turbidity (NTU)	mg/L	3 to 23	12	2 ^e	5
Silica, dissolved	mg/L	15.1 to 15.5	15.3	30	25.1
TDS	mg/L	97 to 295	174	825	610
TSS	mg/L	No data available	No data available	5 ^e	5 (does not include BBID data)
Settleable solids	mL/L	No data available	No data available	<0.1	<0.1 (does not include BBID data)
BOD	mg/L	No data available	No data available	5 ^e	5 (does not include BBID data)
Oil and grease	mg/L	No data available	No data available	<5	<5 (does not include BBID data)
Hardness as CaCO ₃	mg/L	46	46	230	169

^a Data are based on monthly grab sample data collected from the Intake Channel during 1995, 1996, and 1997 (through August). (ECO:LOGIC, January 1998). Information supplemented with grab sample data collected from Intake Channel in July 1999 (Precision Enviro-Tech Samples, July 1999) and data collected at Lateral 45 on April 25-27, 2001.

^b The water quality of BBID's supplies is variable, depending on the time of year and background hydrology of the Delta (i.e., dry versus wet years).

^c Where DDSD data was unavailable or was heavily influenced by industry, an estimate of the constituent value was made based on typical treated wastewater quality in the vicinity of the project.

^d In instances where ranges of data exist for water quality concentrations, the arithmetic average value was used to determine the concentration for blending purposes.

^e Predicted value based on proposed filtration system at DDSD.

**EAST ALTAMONT ENERGY CENTER
DATA ADEQUACY RESPONSES SET 3**

TABLE 8.14-1 REVISED

Summary of Local Surface Water and Groundwater Quality

Constituent	Units	Surface Water ^a	Groundwater ^b
Cations			
Calcium	mg/L	15	120
Magnesium	mg/L	8	98
Sodium	mg/L	28	760
Potassium	mg/L	4	3.4
Iron, dissolved	mg/L	0.03	NA
Manganese	mg/L	0.02	10
Anions			
Sulfate	mg/L	30	640
Chloride	mg/L	33	980
Fluoride	mg/L	0.286	0.3
Nitrate	mg/L	0.06	14
Nitrite	µg/L	NA	NA
Bicarbonate alkalinity	mg/L	57	NA
Metals			
Aluminum	µg/L	167	NA
Antimony	µg/L	<1.0	NA
Arsenic	µg/L	1.22	6
Barium	µg/L	36.5	NA
Cadmium	µg/L	<1.0	NA
Cobalt	µg/L	<1.0	NA
Copper	µg/L	6.37	NA
Lead	µg/L	<4.0	NA
Manganese	µg/L	14.7	10
Mercury	µg/L	<0.2	NA
Nickel	µg/L	2.43	NA
Selenium	µg/L	<1.0	NA
Strontium	µg/L	235	NA
Thallium	µg/L	<1.0	NA
Vanadium	µg/L	2.32	NA
Zinc	µg/L	<7.0	NA
Other			
pH	std units	NA	NA
Hardness as CaCO ₃	mg/L	230	700
Hydroxide alkalinity	mg/L	NA	NA
Conductivity	µmhos/cm	NA	4570

^aData from BBID. Metals data from sampling conducted April 25-27, 2001.

^bData from Well 01S/04E-33M01 Sampled on 6-6-79. (Keeter, 1980).

^cNA – analysis not conducted.

**EAST ALTAMONT ENERGY CENTER
DATA ADEQUACY RESPONSES SET 3**

TABLE 8.14-3 REVISED

Estimated Quality of Brine Discharged to Evaporation Ponds
Under two extreme conditions (100% Raw, 100% Recycled) Water

Constituent/Limits Parameter	Concentrated Brine 100% BBID Raw Water	Concentrated Brine 100% Recycled Water
Flow (gpm)	5.2	20.0
Cations (mg/L)		
Calcium	4,663	8,294
Magnesium	1,855	1,099
Sodium	40,650	38,166
Potassium	3,451	4,076
Ammonium	22	378
Total Cations		
Anions (mg/L)		
Bicarbonate	4,113	1,029
Carbonate	0	0
Hydroxide	0	0
Sulfate	62,911	53,064
Chloride	29,682	38,930
Nitrate	2,199	4,674
Phosphate	0	65
Other (mg/L)		
Total Hardness		
Total Alkalinity		
TSS		
Silica	5,635	2,344
Carbon Dioxide		
TDS	150,000	150,000
Metals/Misc. (mg/L)		
Fluoride	220	106
Arsenic	0.9	0.4
Barium	28	2
Beryllium	0.385	0.07
Boron	193	149
Cadmium	0.4	0.1
Chromium	0.8	1.5
Copper	4.9	0.9
Iron	249	37
Lead	1.5	1.0
Manganese	11	3
Mercury	0.08	0.002

**EAST ALTAMONT ENERGY CENTER
DATA ADEQUACY RESPONSES SET 3**

TABLE 8.14-3 REVISED

Estimated Quality of Brine Discharged to Evaporation Ponds
Under two extreme conditions (100% Raw, 100% Recycled) Water

Constituent/Limits Parameter	Concentrated Brine 100% BBID Raw Water	Concentrated Brine 100% Recycled Water
Nickel	1.9	0.8
Silver	7.7	0.1
Selenium	0.38	0.07
Thallium	0.38	0.7
Zinc	3	1
Cobalt	0.38	
Antimony	0.38	3.5
Vanadium	1.8	

Table 8.14-4 REVISED

Estimated Quality of Cooling Tower Drift
Under Two Extreme Conditions (100% Raw, 100% Recycled) Water

Constituent/ Parameter	Cooling Tower Drift 100 % Raw Water	Cooling Tower Drift 100 % Recycled Water
Flow (gpm)	1.4	1.4
Cations (mg/L)		
Calcium	87	192
Magnesium	31	40
Sodium	164	455
Potassium	22	58
Ammonium	0	5
Anions (mg/L)		
Bicarbonate	122	122
Carbonate	0	0
Hydroxide	0	0
Sulfate	338	735
Chloride	191	554
Nitrate	3	15
Phosphate	0	15
Other (mg/L)		
Total Hardness	347	645
Total Alkalinity	100	100
TSS	20	20
Silica	110	91
Carbon Dioxide	9.5	9
PH	7.3	7.3
TDS	974	2,246
Metals/Misc. (mg/L)		
Fluoride	1.639	2.124

**EAST ALTAMONT ENERGY CENTER
DATA ADEQUACY RESPONSES SET 3**

Table 8.14-4 REVISED

Estimated Quality of Cooling Tower Drift

Under Two Extreme Conditions (100% Raw, 100% Recycled) Water

Constituent/ Parameter	Cooling Tower Drift 100 % Raw Water	Cooling Tower Drift 100 % Recycled Water
Arsenic	0.007	0.015
Barium	0.209	0.036
Beryllium	0.006	0.03
Boron	1.434	3
Cadmium	0.006	0.006
Chromium	0.011	0.129
Copper	0.037	0.0174
Iron	1.855	0.736
Lead	0.023	0.0194
Manganese	0.084	0.069
Mercury	0.001	0.0000332
Nickel	0.014	0.0153
Silver	0.115	0.006
Selenium	0.006	0.003
Thallium	0.006	0.251
Zinc	0.040	0.03
Cobalt	0.006	
Antimony	0.006	0.07
Vanadium	0.013	